

Islandora: a Drupal/Fedora Repository System

The University of Prince Edward Island (Canada) is a small, research-intensive institution, which is developing a considerable infrastructure in support of the stewardship of information resources in the three core areas: administration, learning and research. These efforts are being championed by the Library and are an important element in the transformation of the academic library to one that is critical to the ongoing support and development of the information management needs of the academic enterprise. The core strategy in this process is an open source Drupal/Fedora module called Islandora.

Currently Islandora is being used in production mode in all three areas of the academic operation. The administrative enterprise is supported with document management applications, such as a Senate site that provides access to current Senate materials, as well as providing access to archival documents created via digitization efforts. The research enterprise is the area with the greatest amount of development, with almost 50 research groups on campus set up with their own Virtual Research Environments. In one example the VRE is used to provide stewardship of digital assets related to the discovery of novel chemicals and pharmaceuticals from the sea, including stewardship of gene sequences and mass spectrometer data files. In the learning context, Islandora is providing an environment for the distribution of virtual microscopy applications to students and will be integrated into the campus Moodle system as a learning object repository.

Core to the Islandora development philosophy is the adoption of features that can be generalized to the benefit of communities in all three areas. For example, an enhancement to the Islandora search interface (which use GSearch, Solr and Lucene) to accommodate complex metadata formats such as MzXML (mass spectrometer output) has provided benefits to all sites using the Islandora system. By developing specific requirements into a generalized framework, we are able to leverage development efforts and funds from each project that bring benefit to all.

Islandora is an open source project with 2 core components: a Drupal front-end, providing access to a range of collaborative tools and applications; a Fedora back-end, providing a robust digital asset store. Both systems work together via a custom Drupal module that provides integration with the Fedora system. Key to the Islandora architecture is a separation of data from the collaborative layer. All digital data objects are stored in Fedora and exposed via the Drupal system. Additional components include: a Java-based “rule engine” which provides communication between various external applications and the Fedora system, providing a flexible framework for data transformation; a security filter which sends Drupal’s roles and permissions (provided via LDAP and local Drupal functions) to Fedora’s XACML engine; a flexible metadata editing component that uses Drupal forms to expose the metadata stored in Fedora for updating; the ability to define multiple indexes for collections as well as a central index for all assets in the repository. Islandora has also been integrated with a number of other external applications, such as the Djatoka JPEG2000 server and various text-processing applications.

The Islandora project is hosted by the Fedora Commons and is will soon be available as a 1.0 release using Drupal 6 and Fedora 3, a number of sample collections & content models, including sample data and metadata from all three major use areas. Islandora is also available as an Amazon EC2 image for ease of installation and testing. The system is easily modified to provide local branding and is extensible enough to accommodate the most complex requirement. UPEI is also working on a “one-button” installation called DiscoverySpace that will provide seamless integration with various operating systems and hardware, including Sun Microsystems. Existing external collaborations include one with the University of New Brunswick, which is part of the core team working on Islandora. The session will provide a detailed overview of the Islandora architecture, functionality, the growing community of collaborators as well as examples of production systems in all three major use areas.

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